

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/594,068

Applicant(s)

TAM ET AL.

Examiner

TANYA NGO

Art Unit

2613

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 07 March 2011 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: _____.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☒ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____.
13. ☒ Other: See Continuation Sheet.

/Kenneth N Vanderpuye/
Supervisory Patent Examiner, Art Unit 2613

Continuation of 13. Other: The applicant included arguments in which the applicant states "the examiner appear to have failed to establish why those skilled in the art would have been motivated to use or replace the discrete sensor 32 with fiber Bragg gratings, when examples such as "Rayleigh, Brillouin, and Raman scattering techniques" are already explicitly proposed by Tubel for railway applications" (pg 10, paragraph 2 of applicant's remarks).

However, Tubel does disclose that "distributed fiber sense device 30 and discrete sensors 32 located through the rail system 302 or road system may also be used to monitor other adverse conditions such as subsidence on the ground that can damage the structure. The use of distributed fiber sensing device 30 to detect and measure physical parameters such as pressure, temperature, strain, and acoustics can assure that the structure is being monitored properly" (paragraph [0115]), wherein fiber Bragg gratings are disclosed to be well known in the art to be discrete sensors to measure temperature and traverse strain effects, paragraph [0022]. Hence, the use of the discrete sensors, such as fiber Bragg gratings, are also disclosed as another alternative to monitor conditions in Tubel's railway system. It would be obvious for one of ordinary skill in the art to realize that they could use discrete sensors or Rayleigh, Brillouin, and Raman scattering techniques.

Furthermore, the applicant argues that "Tubel was not aware of and hence did not appreciate the full potential of Fiber Bragg grating in railway applications" because the state a preference of photon scattering techniques by stating "the use of distributed temperature and strain techniques related to Rayleigh, Brillouin, and Raman, and other reflection and photon or photon scattering techniques can provide a significant advantage over electrical or mechanical sensors 32" (paragraph [0016]).

However, just because Tubel is not aware of the full potential does not mean that one of ordinary skill believes that the discrete sensor or Fiber Bragg grating is not a viable option. One of ordinary skill does not mean that one of ordinary skill in the art would think that discrete sensor 32, such as fiber Bragg grating, is usable in the railway system because the application does disclose the use of the discrete sensor used in a railway system (paragraph [0015]). Hence, a discrete sensor, such as a fiber Bragg grating, is a viable option for one of ordinary skill in the art.

Also, applicant believes that Tubel's statement of "the advantage of this latter embodiment over the use of single point or distributed downhole sensors (such as the Bragg grating sensor 32 described in the aforementioned patent is improved reliability, lower cost, as well as more precise measurements" (paragraph [0099]).

However, when an individual reads the patent in its entirety, the application of the sensors being discussed in paragraph [0099] is not the application of the sensor system in a railway system, but is rather a cementing operation in which the "distributed or single point pressure, strain, and/or temperature sensors 32 are deployed in the well inside or outside of the casing such as sensor 32b before the cement process starts, paragraph [0096], not in a rail system.

The applicant argues that Tubel at paragraph [0099] and [0114] to [0116] would appear to suggest that fiber Bragg grating sensors are considered inferior and are not recommended. Specifically, the applicant quotes that Tubel states "reliability can be improved if no sensors 32 are deployed in the rail 302, using reflect photons from the light traveling into fiber optical cable 20 instead" (see paragraph [0016]). However, MPEP 2121.04 Section II specifically states that "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

Hence, although the paragraphs of Tubel disclose that fiber Bragg grating sensors may be inferior to the use of Rayleigh, Brillouin, and Raman scattering does not mean that the art of Tubel teaches away from the use of fiber Bragg gratings.

Applicant also states that "given the prejudice in the field against the introduction of new technology and the extreme conservative mindset, it would appear that the railway engineer would not find it obvious to implement Bragg gratings in the embodiment of Fig. 5 of Tubel's invention, where there is not express indication that Bragg gratings are particularly suitable to railway monitoring system or has been tried and test in a railway environment" (pg 14 paragraph 2 of applicant's remarks).

However, Bragg gratings is not a new technology, but rather it is disclosed as "a known sensor" used in optical fibers, paragraph [0022]. Since it is known to be used in optical system, it would not be unreasonable for the extreme conservative mindset to implement Bragg gratings. Furthermore, these is the express disclosure of the use of discrete sensors 32 to be used within the rail system, paragraph [0115], wherein the definition of discrete according to the Merriam-Webster dictionary is "individual" or "consisting of distinct or unconnected elements". Furthermore, the applicant discloses that the known Bragg Grating sensor is a type of individual sensor places along a fiber length" (paragraph [0022]. Hence, it would be obvious to one of ordinary skill in the art to understand that a Bragg grating is a suitable sensor for a discrete sensor disclosed in the railway system.

Furthermore, although Varsai does not contain "clear examples as to how the optical sensor can be implemented in the railway systems", does not raise doubt as to those skilled in the art would be motivated or find it obvious to replace the optical sensors of Fig. 5 with Bragg gratings. Varsai does disclose that the Bragg gratings are applicable to the "railway", which is motivation enough for one skilled in the art to at least try to use the Bragg grating because it is an viable alternative.

Lastly, the applicant argues that "it would be difficult from them to ascertain whether the Bragg grating have been dislocated". However, the applicant does not claim that the fiber Bragg gratings are dislocated in any of the claims. However, the applicant does claim that "the first Bragg grating is pre-strained in a direction at least substantially parallel to said one track" which the examiner rejected under official notice. The art that teaches the pre-strain Bragg grating is well known in the art id disclosed by US Patent 6,377,727 which states that "it is well known to pre-strain the rejection of the optical fiber containing the fiber Bragg grating to compensate for a change in temperature, Col

2, lines 1-3, resulting in increase sensitivity for monitoring other characteristics.